

## **Cuyahoga River Beneficial Use Impairments**

### **Restrictions on Wildlife Consumption:**

No data have been found to suggest this is impaired in the Cuyahoga River AOC, nor has the ODH issued any wildlife consumption advisories. In 1998 nuisance deer culled from Cleveland Metroparks in the AOC were tested for disease causing bacteria and parasites, found to be fit for human consumption and donated to a local food bank. A 1999 ODNR study of pesticide residue in nuisance geese from the AOC determined that there was no human risk from consumption of Canada geese. In 2005 the RAP Restoration/Delisting Work Group consulted with Ohio Department of Natural Resources (ODNR) Division of Wildlife officials and evaluated this category as probably "NOT IMPAIRED" based on the previous studies and the extremely limited hunting opportunities within the AOC.

### **Tainting of Fish & Wildlife Flavor:**

Chemical water quality data from 1996 and 2000 intensive surveys did not identify any exceedances of phenols (which contribute to tainting). The [2003 Lower Cuyahoga River TMDL Report](#) did not identify phenols as a water quality concern. In 2005 the RAP Restoration/Delisting Work Group consulted with ODNR fish and game officials who reported that no reports of any tainting of fish or game have been received. They evaluated this category as probably "NOT IMPAIRED".

### **Degradation of Fish Populations:**

In 1999 and 2000 Ohio EPA conducted an intensive survey of fish populations in the Cuyahoga River watershed. Beginning at the Ohio Edison Gorge (River Mile 45) and extending downstream to Lake Erie, IBI and MIwb scores (Ohio EPA measures of fish population conditions) ranged from FULL to PARTIAL to NON ATTAINMENT with applicable Ohio warmwater habitat aquatic life use criteria, depending on the segment. For the first time segments of the main stem of the Cuyahoga River and the Old River Channel section of the navigation channel were found to be in FULL attainment. This category evaluation has been upgraded from "IMPAIRED" to "IMPAIRED IN PLACES".

### **Degradation of Wildlife Populations:**

In 2005 the RAP Restoration/Delisting Work Group consulted with wildlife management officials from federal, state and county park systems to evaluate this impairment. The ODNR goal for bald eagle populations, a sentinel species, has been achieved, and at least one nesting pair is located within the AOC. Officials also reported increases in populations of other sentinel species, great blue heron and osprey. Amphibian monitoring within the Cuyahoga Valley National Park has found no noted changes in population over the past 10 years. This category has been evaluated as probably "NOT IMPAIRED".

### **Fish Tumors or Other Deformities:**

Ohio EPA data collected in 1996 and 2000 indicate that although deformities, eroded fins, lesions and external tumors (DELT anomalies) have declined throughout the watershed, exceedances of the target 0.5% target level still occur in segments from the headwaters to the nearshore areas of Lake Erie and in some tributaries. This category has been evaluated as "IMPAIRED".

### **Bird or Animal Deformities or Reproductive Problems:**

In 2005 the RAP Restoration/Delisting Work Group consulted with wildlife management officials from federal, state and county park systems to evaluate this impairment. No data have been found to suggest this is impaired in the Cuyahoga River AOC, and officials have received no reports of any animal deformities. The ODNR goal for bald eagle populations, a sentinel species, has been achieved, and at least one nesting pair is located within the AOC. Officials also reported increases in populations of other sentinel species, great blue heron and osprey. Amphibian monitoring within the Cuyahoga Valley National Park has found no noted changes in

population over the past 10 years. This category has been evaluated as probably “NOT IMPAIRED”.

**Degradation of Benthos:**

In 1999 and 2000 Ohio EPA conducted an intensive survey of benthic macroinvertebrate populations in the Cuyahoga River watershed. For the first time, ICI scores (Ohio EPA measures of benthic macroinvertebrate population conditions) met or exceeded applicable Ohio warmwater habitat aquatic life use criteria throughout the AOC in the main stem segments surveyed. Evaluations of tributary segments, the navigation channel and nearshore area ranged from poor to fair to moderately good to good. This category evaluation has been upgraded from “IMPAIRED” to “IMPAIRED IN PLACES”.

**Restrictions on Dredging Activities:**

Most of the sediments dredged from the navigation channel of the Cuyahoga AOC are subject to restrictions on disposal because of their classification by U.S. EPA as “heavily polluted” by heavy metals. Only a small amount of the dredged material at the extreme upstream end of the navigation channel has no restrictions on disposal (30,000 cubic yards of a total 400,000 cubic yards dredged annually) and is used for beach nourishment. The “heavily polluted” sediments are disposed of in a confined disposal facility in the Cleveland area. This category is listed as “IMPAIRED”.

**Eutrophication or Undesirable Algae:**

The [Lower Cuyahoga River TMDL Report](#) (Ohio EPA, 2003) identified organic enrichment and nutrients among the major causes of impairment of this area. The navigation channel is listed as probably impaired because of severe oxygen depletion that may occur during summer months. This is due primarily to exertion of sediment oxygen demand compounded by the dredged, bulkheaded morphology of this segment. The nearshore Lake Erie area is currently listed as impaired, but recent changes in water clarity and phytoplanktonic cell abundance warrant further study. This category is listed as “IMPAIRED”.

**Restrictions on Drinking Water Consumption, or Taste & Odor:**

No public drinking water supply exists in the AOC. Akron draws water from reservoirs in the upper section of the Cuyahoga River, above the AOC, while Cleveland draws raw water from Lake Erie beyond the boundaries of the AOC. However, this does not consider a surface supply to individual customers or any potential influence of surface water quality on ground water quality on the segment between the Ohio Edison Dam and the head of the navigation channel. The impairment is listed as “UNKNOWN” for this segment.

**Beach Closings & Recreational Access:**

Two public swimming beaches are located in the AOC on the Lake Erie shoreline. High bacteria levels after storm events make this “IMPAIRED PERIODICALLY”. Swimming is not advised for a period of one to two days following a rainstorm, or when bacteria levels are high enough to warrant posting of the beach. Public access to the river in the section from the Ohio Edison Dam to the head of the navigation channel is “NOT IMPAIRED” due to the 1993 completion of the 22-mile towpath trail in the Cuyahoga Valley National Recreation Area. This bike and hike path is being extended into Cleveland to the north and into Akron in the south. Recreational access to the river is considered “IMPAIRED IN PLACES” in the navigation channel and nearshore area due to the primarily industrial land use, although several small parks exist and more are planned.

**Degradation of Aesthetics:**

Despite limited quantitative data and methodology limitations, aesthetics are considered “IMPAIRED” throughout the AOC when compared to Ohio general surface water quality criteria. Erosion of hillsides and streambanks; contamination of the waterways with natural debris; as well as the effects of trash, detergents, solids and odor from failing septic systems; CSOs; and improper dumping are pervasive. Many of the problems to aesthetics are exacerbated by storms and high flow conditions. Trash, debris, oils and other materials on street surfaces may enter the

waterways through storm sewer discharges. Some improvements in this category have been noted through the installation of floatable debris collection devices on CSO outlets in Cleveland; further improvements are expected through the implementation of Phase 2 Storm Water Management Plans by AOC communities over the next few years.

**Degradation of Phytoplankton & Zooplankton Populations:**

Plankton has historically been used as an indicator in lakes rather than streams. There is considerable historical data on the open waters of Lake Erie, but this information does not extend into the Cuyahoga RAP AOC. Although limited studies on phytoplankton populations indicate they may be possibly impaired in the AOC when compared to other areas, no indices of phytoplankton community health or ecosystem health based on the phytoplankton community structure currently exist. No standards exist for zooplankton communities as well. No studies of zooplankton communities have been made in the riverine portion of the AOC, and limited information is available for the nearshore Lake Erie area. As such, it is proposed to continue to list the status of this BUI as "UNKNOWN".

**Added Cost to Agriculture & Industry:**

The RAP has determined this use is "NOT IMPAIRED" based on water withdrawal records maintained by the Ohio Department of Natural Resources and a survey of industrial users. There are no registered water withdrawals for agricultural purposes in the AOC.

**Loss of Fish & Wildlife Habitat:**

From the Ohio Edison Dam to the head of the navigation channel fish habitat is "NOT IMPAIRED" while wildlife habitat is "IMPAIRED IN PLACES", particularly urban areas. In the navigation channel the combination of past channelization, lack of riparian cover, siltation of bottom substrates, low gradient, bankwalls of concrete and sheet piling, annual maintenance dredging and loss of natural substrates contribute to this segment being "IMPAIRED" for both fish and wildlife. Shoreline alterations, maintenance dredging, and the use of the littoral zone for development result in the nearshore Lake Erie area considered "IMPAIRED IN PLACES".